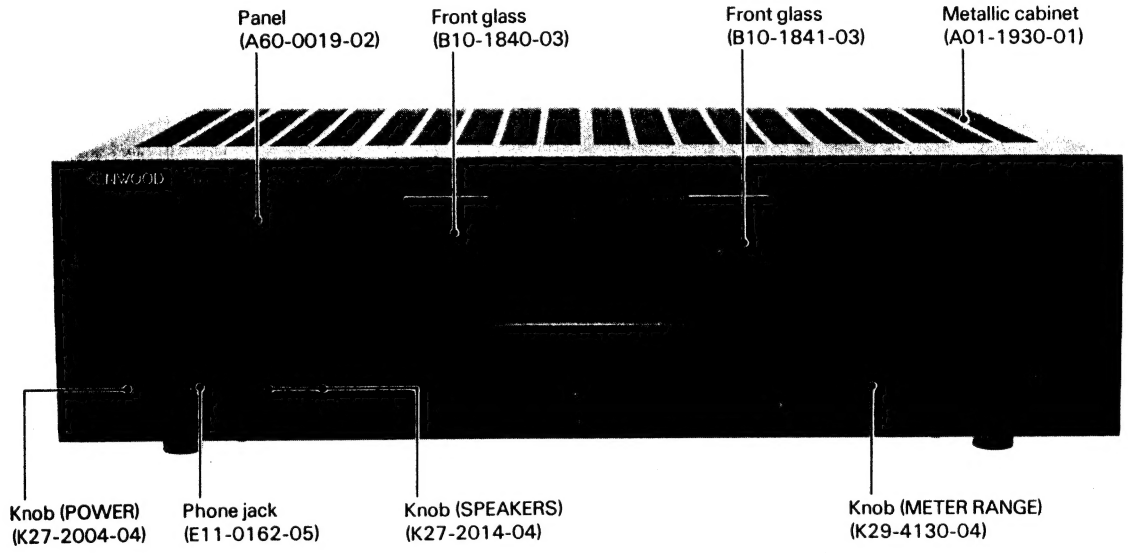
STEREO POWER AMPLIFIER

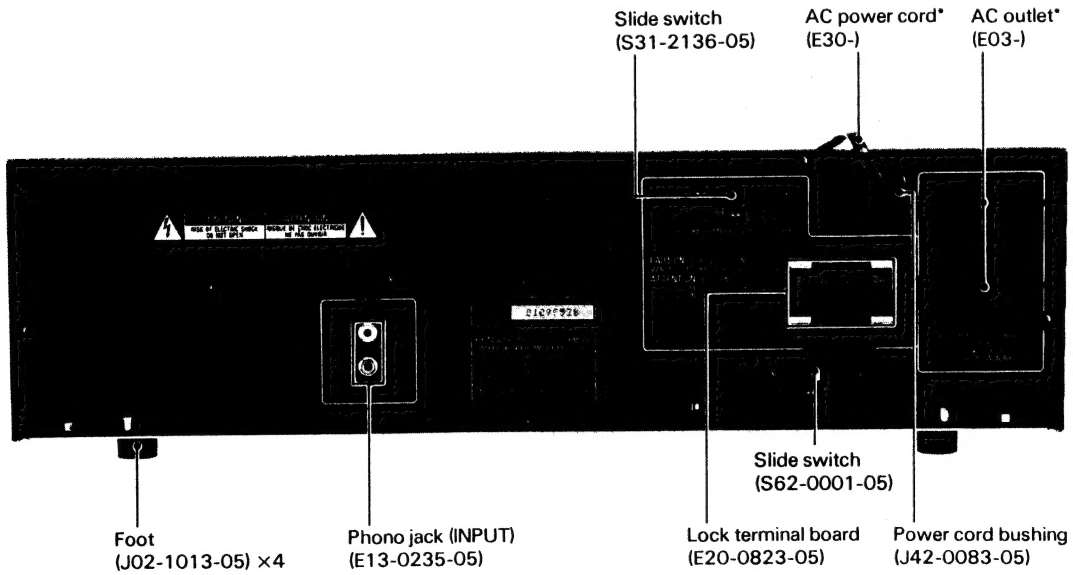
KM-991

SERVICE MANUAL

KENWOOD

B51-4287-00(S)2260



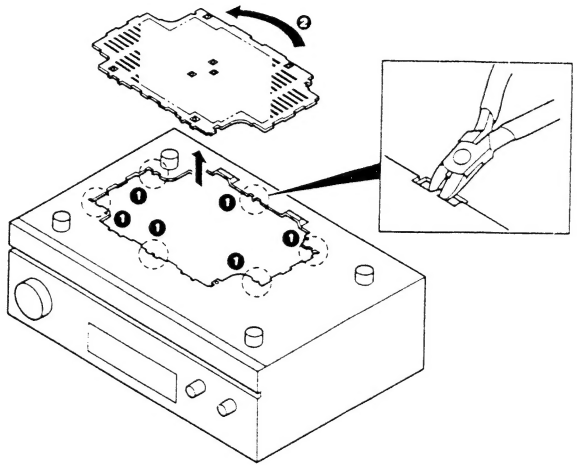


*** Refer to parts list on page 12.**

DISASSEMBLY FOR REPAIR

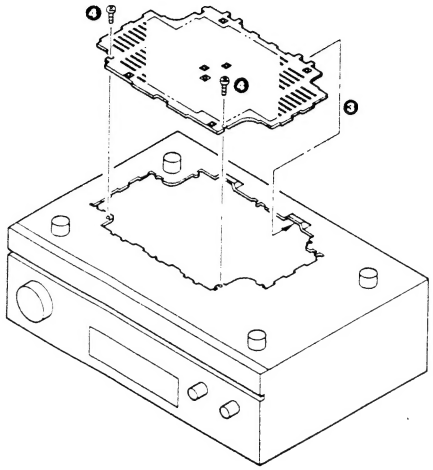
How to remove the repairing chassis

1 Cut the 6 parts ❶ of the repairing chassis. Remove the repairing chassis from main chassis.



After repair

2 Turn the repairing chassis 180 degrees in the arrow direction ❷.
3 Insert the 2 claws ❸ into main chassis.
4 Lock to the main chassis by 2 screws (M3 × 6) ❹.



ADJUSTMENT/REGLAGES/ABGLEICH

ADJUSTMENT

No.	ITEM	INPUT SETTINGS	OUTPUT SETTINGS	AMPLIFIER SETTING	ALIGNMENT POINTS	ALIGN FOR	FIG.
1	IDLE CURRENT	–	Connect a DC voltmeter across CP1 (L) CP2 (R)	VOLUME: 0	VR1 (L) VR2 (R)	9 ~ 18mV	(a)

REGLAGES

N°	ITEM	REGLAGE DE L'ENTREE	REGLAGE DE LA SORTIE	REGLAGE DE L'AMPLIFICATEUR	POINTS DE L'ALIGNMENT	ALIGNER POUR	FIG.
1	COURANT DE POLARISATION	–	Connecter un voltmètre de CC SUR CP1 (G) CP2 (D)	VOLUME: 0	VR1 (G) VR2 (D)	9 ~ 18mV	(a)

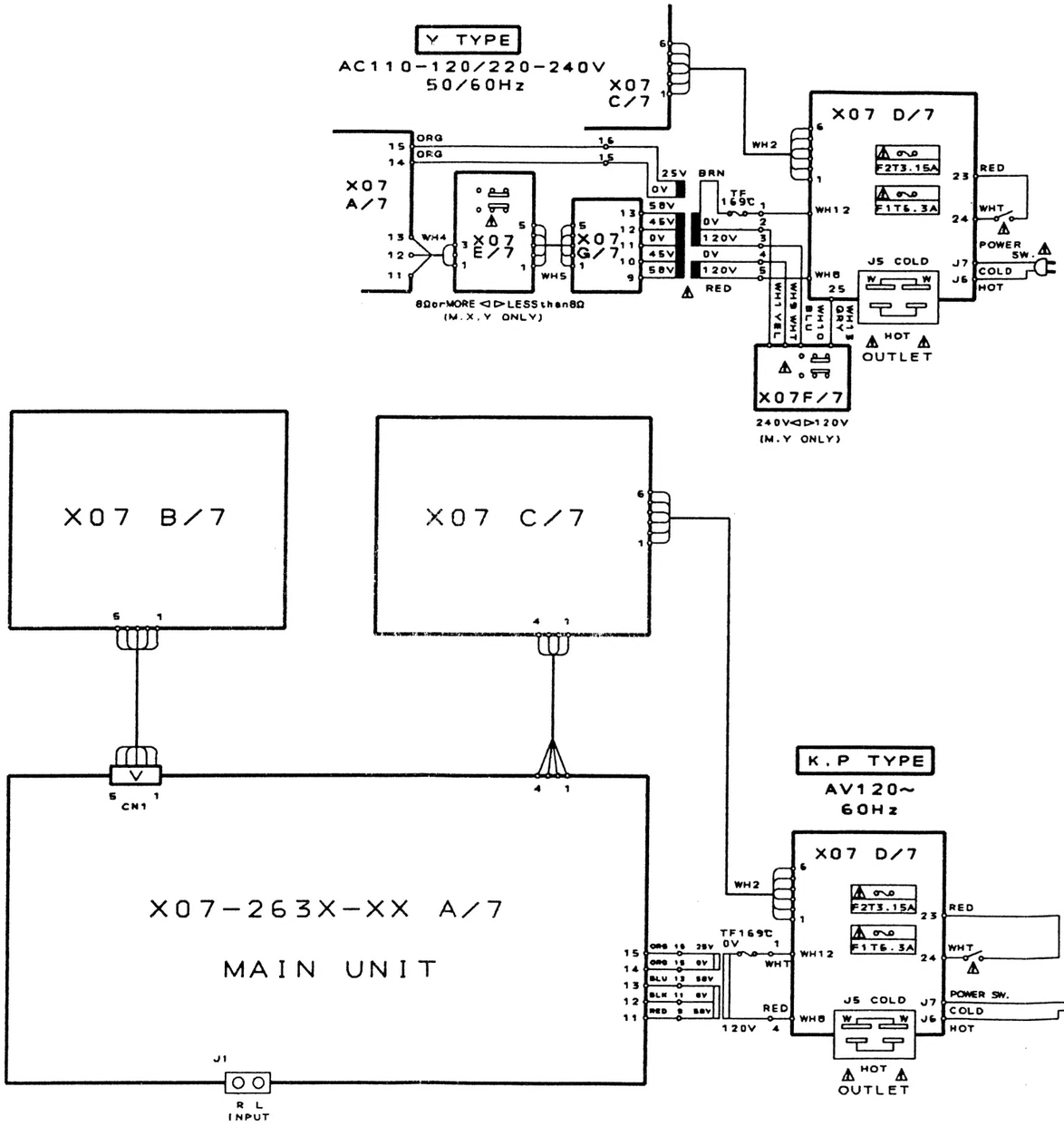
ABGLEICH

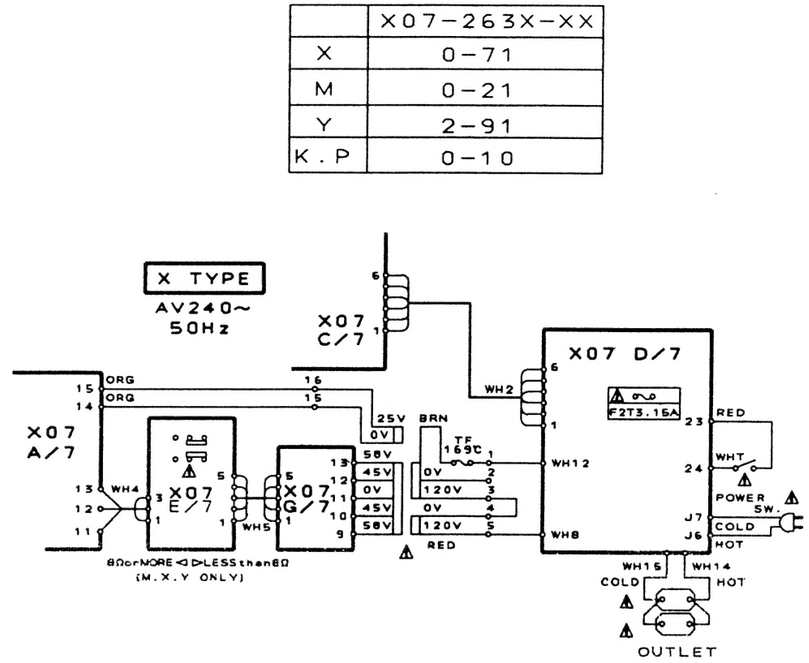
NR.	GENGENSTAND	EINGANGS-EINSTELLUNG	AUSANG-EINSTELLUNG	VORSTÄRKER-EINSTELLUNG	ABGLEICHE-PUNKTE	ABGLEICHEN FÜR	ABB.
1	LEERLAUFSTROM	–	Einen Gleichspannungs messer über CP1 (L) CP2 (R) anschließen.	VOLUME: 0	VR1 (L) VR2 (R)	9 ~ 18mV	(a)

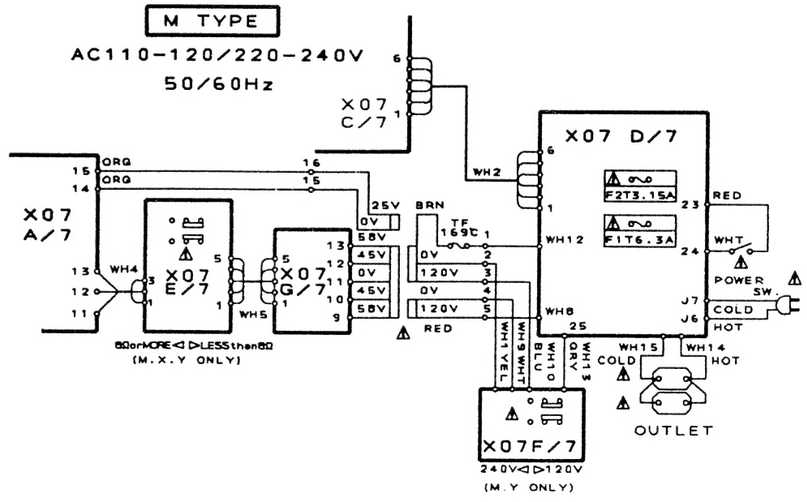
KM-991 KM-991

WIRING DIAGRAM

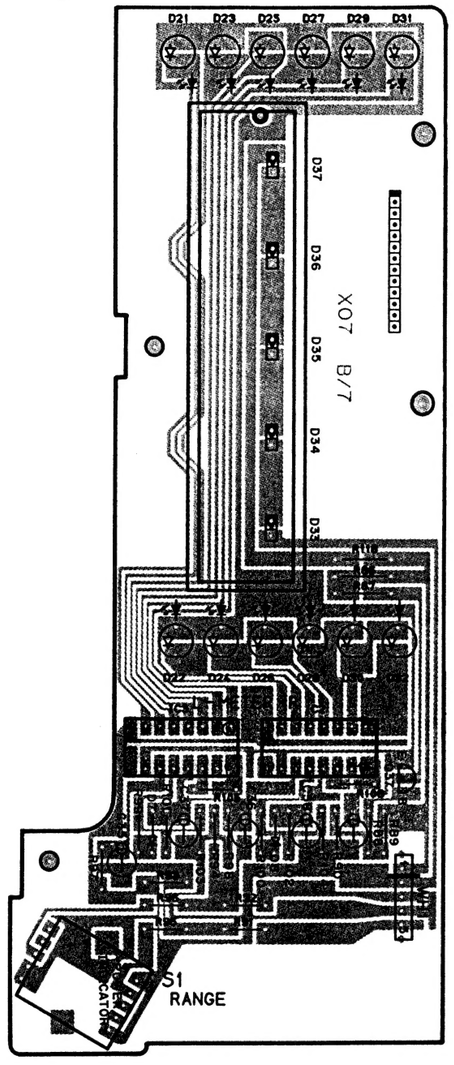
	X07-263X-XX
X	0-71
M	0-21
Y	2-91
K.P	0-10

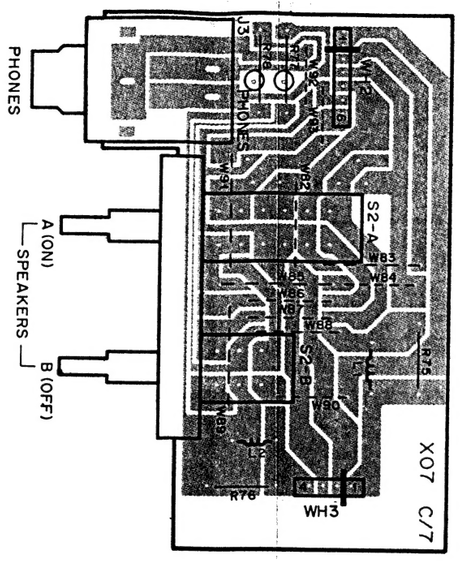


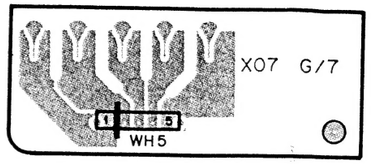


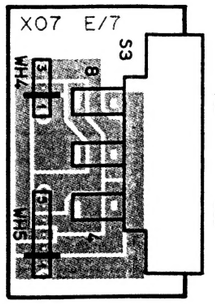


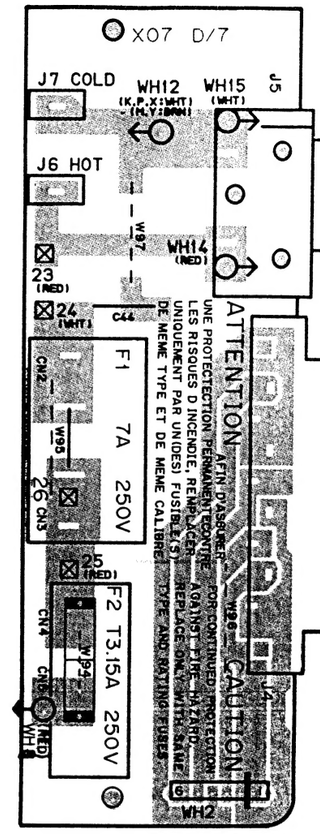
PC BOARD (Component side view)

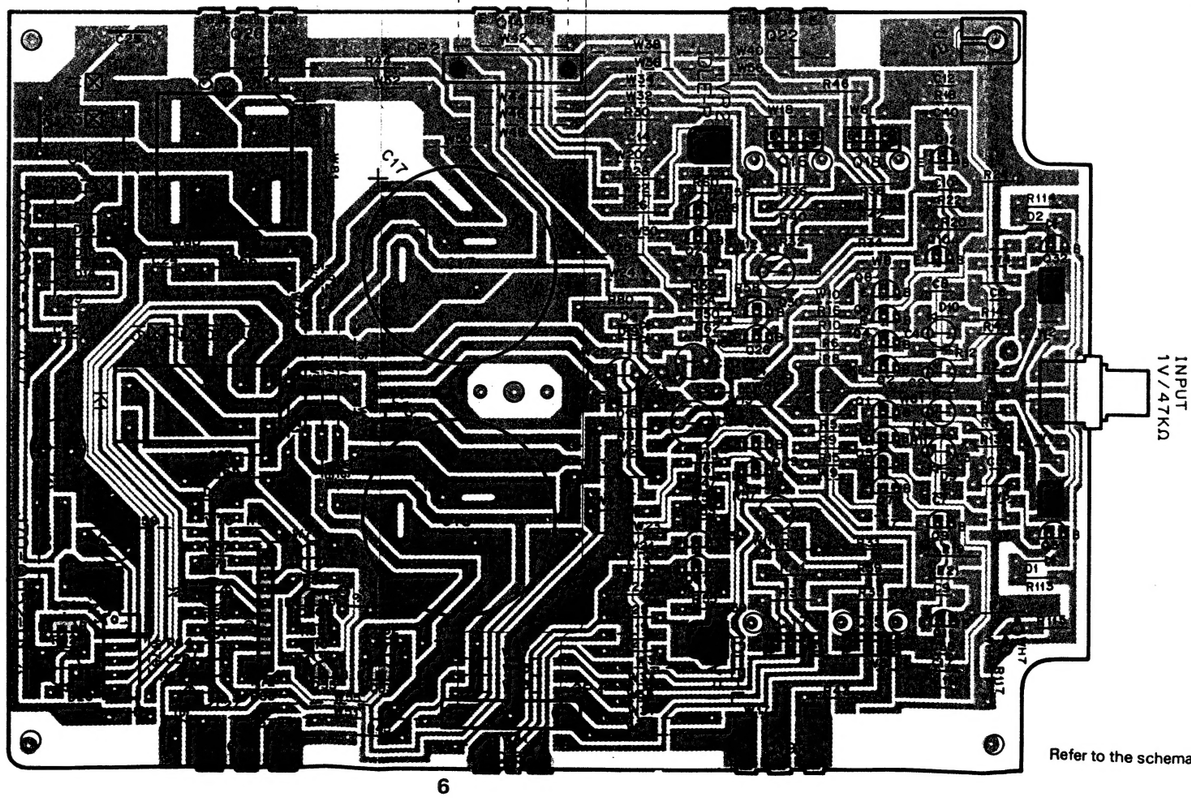


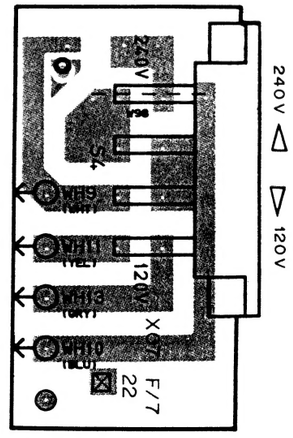




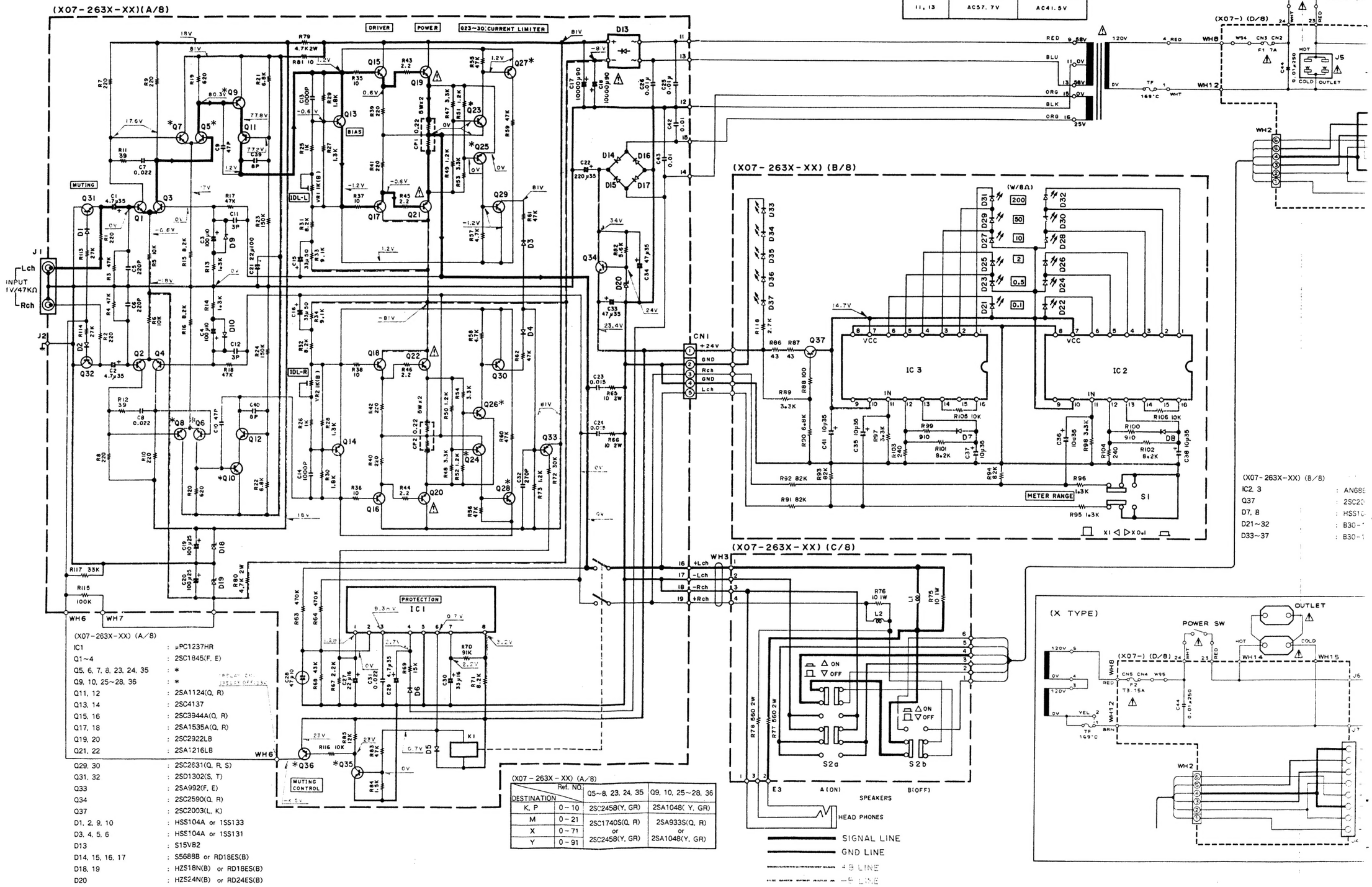








Refer to the schematic diagram for the values of resistors and capacitors.



PIN NO.	8Ω or MORE	LESS THAN 8Ω
11, 13	AC57.7V	AC41.5V

(X07-263X-XX) (A/8)

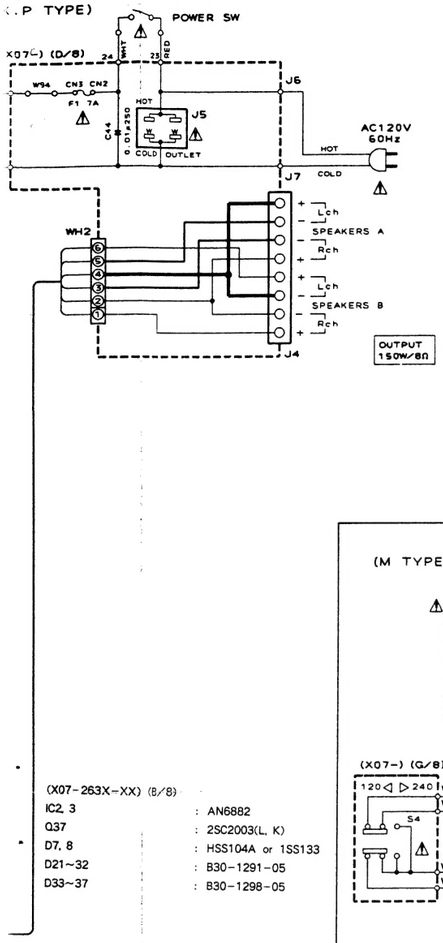
IC1	: μPC1237HR
Q1~4	: 2SC1845(F, E)
Q5, 6, 7, 8, 23, 24, 35	: *
Q9, 10, 25~28, 36	: *
Q11, 12	: 2SA1124(Q, R)
Q13, 14	: 2SC4137
Q15, 16	: 2SC3944A(Q, R)
Q17, 18	: 2SA1535A(Q, R)
Q19, 20	: 2SC2922LB
Q21, 22	: 2SA1216LB
Q29, 30	: 2SC2631(Q, R, S)
Q31, 32	: 2SD1302(S, T)
Q33	: 2SA992(F, E)
Q34	: 2SC2590(Q, R)
Q37	: 2SC2003(L, K)
D1, 2, 9, 10	: HSS104A or 1SS133
D3, 4, 5, 6	: HSS104A or 1SS131
D13	: S15VB2
D14, 15, 16, 17	: S5688B or RD18ES(B)
D18, 19	: HZS18N(B) or RD18ES(B)
D20	: HZS24N(B) or RD24ES(B)

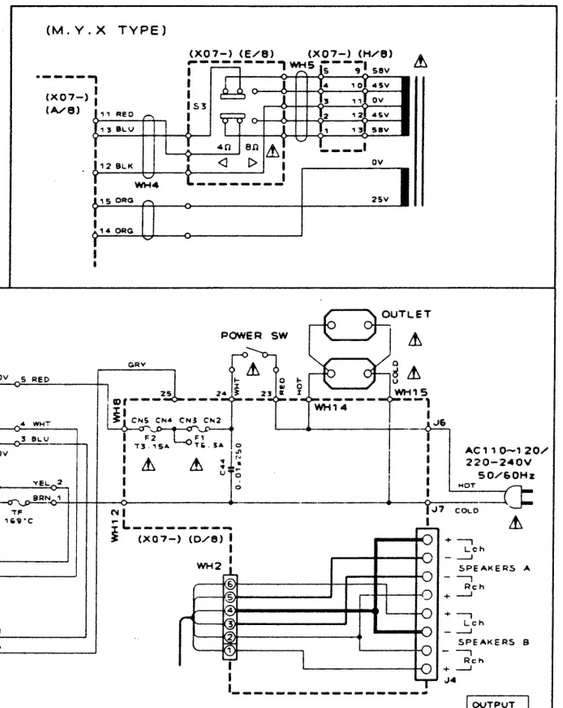
(X07-263X-XX) (A/8)

DESTINATION	Ref. NO.	Q5~8, 23, 24, 35	Q9, 10, 25~28, 36
K, P	0-10	2SC2458(Y, GR)	2SA1048(Y, GR)
M	0-21	2SC1740S(Q, R) or 2SC2458(Y, GR)	2SA933S(Q, R) or 2SA1048(Y, GR)
X	0-71		
Y	0-91		

(X07-263X-XX) (B/8)

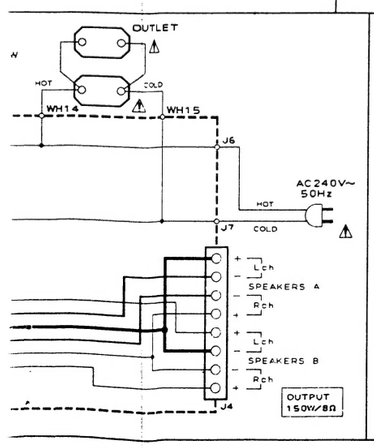
IC2, 3	: AN6884
Q37	: 2SC20
D7, 8	: HSS10
D21~32	: B30-1
D33~37	: B30-1

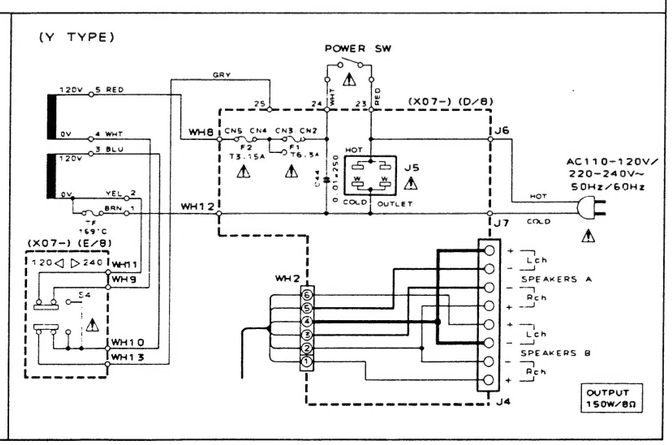


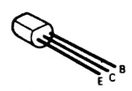


(X07-263X-XX) (8/8)

IC2, 3	:	AN6882
Q37	:	2SC2003(L, K)
D7, 8	:	HSS104A or 1SS133
D21~32	:	B30-1291-05
D33~37	:	B30-1298-05

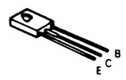


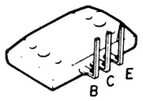


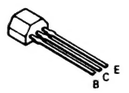

2SA1124
2SA992
2SC1845
2SC2003
2SC2631
2SD1302

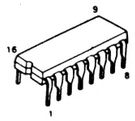

2SC4137

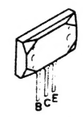

2SA1535A
2SC3944A

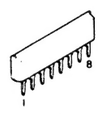

2SC2590


2SC2922LB


2SA1048
2SA933S
2SC1740S
2SC2458


AN6882


2SA1216LB


UPC1237HA

CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). ⚠ Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

DC voltages are as measured with a high impedance voltmeter. Values may vary slightly due to variations between individual instruments or and units.

Les tensions c.c. doivent être mesurées avec un voltmètre à haute impédance. Les valeurs peuvent différer légèrement du fait des variations inhérentes aux appareils et aux instruments de mesure individuels.

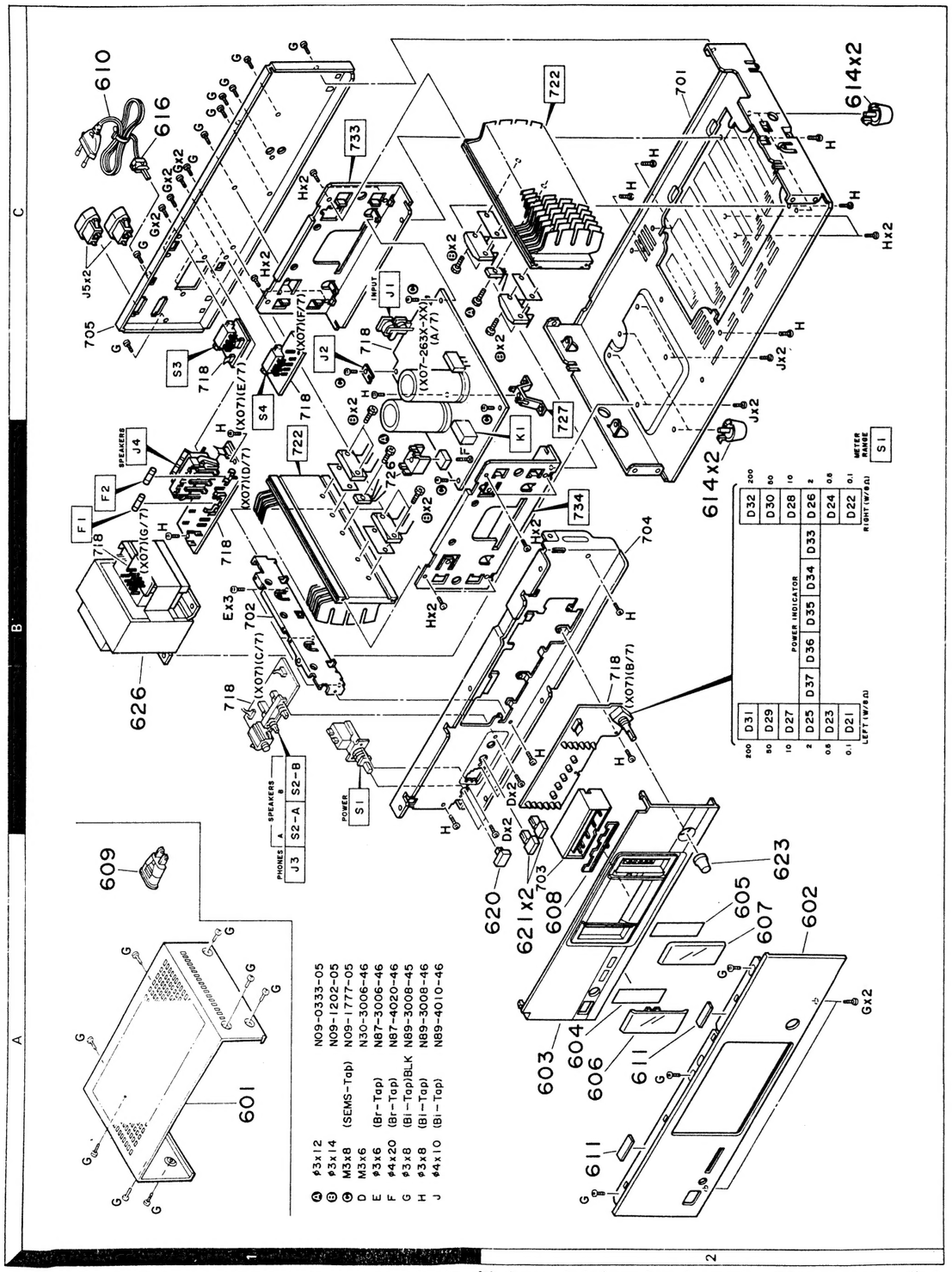
Die angegebenen Gleichspannungswerte wurden mit einem hochohmigen Spannungsmesser gemessen. Dabei schwanken die Meßwerte aufgrund von Unterschieden zwischen einzelnen Instrumenten oder Geräten u. U. geringfügig.

Y08-4310-10

KM-991

KENWOOD

EXPLODED VIEW (MECHANISM UNIT)



Parts with the exploded numbers larger than 700 are not supplied.

PARTS LIST

Destination list

	JAPAN MADE
KM-991	K, P, M, X, Y

Main amplifier unit

X07-2630-10	KM-991K, P
X07-2630-21	KM-991M
X07-2630-71	KM-991X
X07-2632-91	KM-991Y

No. 1

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Destination 仕向	Remarks 備考
			KM-991			
601	1A	*	A01-1930-01	METALLIC CABINET		
602	2A	*	A60-0019-02	PANEL		
603	2A,2B	*	B01-0478-01	PANEL ESCUTCHEON		
604	2A	*	B03-2691-04	DRESSING PLATE		
605	2A	*	B03-2692-04	DRESSING PLATE		
606	2A	*	B10-1840-03	FRONT GLASS L		
607	2A	*	B10-1841-03	FRONT GLASS R		
608	2A	*	B12-0156-04	INDICATOR		
-			B46-0092-03	WARRANTY CARD	K	
-			B46-0094-03	WARRANTY CARD	Y	
-			B46-0095-03	WARRANTY CARD	Y	
-			B46-0096-23	WARRANTY CARD	X	
-			B46-0121-03	WARRANTY CARD	P	
-			B58-0513-04	CAUTION CARD (PRESET220-240)	Y	
-		*	B60-0338-00	INSTRUCTION MANUAL (ENGLISH)		
-		*	B60-0339-00	INSTRUCTION MANUAL (FRENCH)	P	
-		*	B60-0340-00	INSTRUCTION MANUAL (SP,AL,CH)	M	
⚠1 609	1A		E03-0115-05	AC PLUG ADAPTER	M	
⚠1 610	1C		E30-0459-05	AC POWER CORD	M	
⚠1 610	1C		E30-0812-05	AC POWER CORD	Y	
⚠1 610	1C		E30-1341-05	AC POWER CORD	X	
⚠1 610	1C		E30-2209-05	AC POWER CORD	KP	
⚠1 J5	1C		E03-0055-05	AC OUTLET	M	
⚠1 J5	1C		E03-0114-05	AC OUTLET	X	
611	2A		G11-0155-14	SOFT TAPE (40X9X2)		
-		*	H50-0017-04	ITEM CARTON CASE		
-		*	H10-3979-12	POLYSTYRENE FOAMED FIXTURE		
-			H25-0223-04	PROTECTION BAG (750X350X0.03)		
-			H25-0232-04	PROTECTION BAG (235X350X0.03)		
614	2B,2C		J02-1013-05	FOOT		
⚠1 616	1C		J41-0083-05	POWER CORD BUSHING		
-			J61-0307-05	WIRE BAND		
620	2A		K27-2004-04	KNOB (BUTTON) POWER		
621	2A		K27-2014-04	KNOB (BUTTON) SPEAKERS		
623	2A	*	K29-4130-04	KNOB METER RANGE		
626	1B		L01-7901-05	POWER TRANSFORMER	KP	
626	1B		L01-7905-05	POWER TRANSFORMER	YMX	
D	2A,2B		N30-3006-46	PAN HEAD MACHIN SCREW		
E	2B		N87-3006-46	BRAZIER HEAD TAPTITE SCREW		
G	1A,1B		N89-3008-45	BINDING HEAD TAPTITE SCREW		
H	1B,1C		N89-3008-46	BINDING HEAD TAPTITE SCREW		
J	2C		N89-4010-46	BINDING HEAD TAPTITE SCREW		
⚠1 S1	1B		S40-1094-05	PUSH SWITCH (POWER)		
			MAIN AMPLIFIER UNIT (X07-2630-10, K,P, 0-21:M, 0-71:X, 2-91:Y)			
D21 -32			B30-1291-05	LED(LN21CP5LX(V))-(TA41)		
D33 -37			B30-1298-05	LED(SEL1213C LC02)		
C1 ,2			CE04LW1V4R7M	ELECTRO 4.7UF 35WV		
C3 ,4			CE04LW1A101M	ELECTRO 100UF 10WV		
C5 ,6			CC45FSL1H221J	CERAMIC 220PF J		

* New Parts
Parts without Parts No. are not supplied.
Les articles non mentionnes dans le Parts No. ne sont pas fournis.
Teile ohne Parts No. werden nicht geliefert.

E: Scandinavia & Europe K: USA P: Canada
Y: PX(Far East, Hawaii) T: England M: Other Areas
Y: AAFES(Europe) X: Australia

⚠ indicates safety critical components.

× New Parts
Parts without Parts No. are not supplied.
Les articles non mentionnés dans le Parts No. ne sont pas fournis.
Teile ohne Parts No. werden nicht geliefert.

No. 2

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Destination 仕向	Remarks 備考
C7 ,8			CQ92FM1H223J	MYLAR 0.022UF J		
C9 ,10			CC45FSL1H470J	CERAMIC 47PF J		
C11 ,12			CC45FSL1H030C	CERAMIC 3.0PF C		
C13 ,14			CQ92FM1H102J	MYLAR 1000PF J		
C15 ,16			CE04LW1H330M	ELECTRO 33UF 50WV		
C17 ,18			C90-1867-05	ELECTRO 10000UF 90WV		
C19 ,20			CE04LW1E101M	ELECTRO 100UF 25WV		
C21			CE04LW2A220M	ELECTRO 22UF 100WV		
C22			CE04EW1V221M	ELECTRO 220UF 35WV		
C23 ,24			CQ92FM1H153J	MYLAR 0.015UF J		
C25 ,26			CK45FE2H103P	CERAMIC 0.010UF P		
C27			CE04LW1C220M	ELECTRO 22UF 16WV		
C28			C90-1334-05	NP-ELEC 47UF 10WV		
C29			CE04LW1V4R7M	ELECTRO 4.7UF 35WV		
C30			CE04LW1C330M	ELECTRO 33UF 16WV		
C31			CQ92FM1H223J	MYLAR 0.022UF J		
C32			CC45FSL1H271J	CERAMIC 270PF J		
C33 ,34			CE04LW1V470M	ELECTRO 47UF 35WV		
C35 -38			CE04LW1V100M	ELECTRO 10UF 35WV		
C39 ,40			CC45FSL1H080D	CERAMIC 8.0PF D		
C41			CE04LW1V100M	ELECTRO 10UF 35WV		
C42 ,43			CK45FF1H103Z	CERAMIC 0.010UF Z		
⚠ C44			C91-0971-05	FILM 0.01UF 250WV		
J1			E13-0235-05	PHONO JACK INPUT		
J3			E11-0162-05	PHONE JACK (3P)HEAD PHONE		
J4			E20-0823-05	LOCK TERMINAL BOARD(8P)SPEAKERS		
J5			E03-0117-05	AC OUTLET	KPY	
⚠ F1			F05-6321-05	FUSE (SEMKO) (250V T6.3A)	YM	
⚠ F1			F05-7026-05	FUSE (UL) (250V 7A)	KP	
⚠ F2			F05-3121-05	FUSE (SEMKO) (250V T3.15A)	YMX	
-			J13-0055-05	FUSE CLIP	KPYM	
-			J13-0075-05	FUSE CLIP	YMX	
L1 ,2			L39-0085-05	PHASE-COMPENSATION COIL		
A	1B,1C		N09-0333-05	TAPPING SCREW (3X12)		
B	1B,1C		N09-1202-05	TAPPING SCREW (3X14)		
C	1B,1C		N09-1777-05	SEMS (TAPTITE SCREW)		
F	1B		N87-4020-46	BRAZIER HEAD TAPTITE SCREW		
H	1B,1C		N89-3008-46	BINDING HEAD TAPTITE SCREW		
CP1 ,2		*	R90-0826-05	MULTIPLE RESISTOR		
R7 -10			RD14GB2E221J	FL-PROOF RD 220 J 1/4W		
R19 ,20			RD14GB2E621J	FL-PROOF RD 620 J 1/4W		
R25 ,26			RD14GB2E102J	FL-PROOF RD 1.0K J 1/4W		
R27 ,28			RD14GB2E132J	FL-PROOF RD 1.3K J 1/4W		
R29 ,30		*	RD14NB2E182J	RD 1.8K J 1/4W		
R31 ,32		*	RD14NB2E822J	RD 8.2K J 1/4W		
R33 ,34			RD14GB2E912J	FL-PROOF RD 9.1K J 1/4W		
R35 -38			RD14GB2E100J	FL-PROOF RD 10 J 1/4W		
R39			RD14NB2E221J	RD 220 J 1/4W		
R40 -42			RD14GB2E221J	FL-PROOF RD 220 J 1/4W		
R43 ,44			RD14NB2E2R2J	RD 2.2 J 1/4W		
R45			RD14GB2E2R2J	FL-PROOF RD 2.2 J 1/4W		
R46			RD14NB2E2R2J	RD 2.2 J 1/4W		
R65 ,66			RS14KB3D100J	FL-PROOF RS 10 J 2W		

E: Scandinavia & Europe K: USA P: Canada
Y: PX(Far East, Hawaii) T: England M: Other Areas
Y: AAFES(Europe) X: Australia

⚠ indicates safety critical components.

× New Parts
Parts without Parts No. are not supplied.
Les articles non mentionnés dans le Parts No. ne sont pas fournis.
Teile ohne Parts No. werden nicht geliefert.

No. 3

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Destination 仕向	Remarks 備考
R75 ,76			RS14KB3A100J	FL-PROOF RS 10 J 1W		
R77 ,78			RS14KB3D561J	FL-PROOF RS 560 J 2W		
R79 ,80			RS14KB3D472J	FL-PROOF RS 4.7K J 2W		
R81			RD14GB2E100J	FL-PROOF RD 10 J 1/4W		
VR1 ,2		*	R12-1616-05	TRIMMING POT. 1K		
K1			S51-2078-05	MAGNETIC RELAY		
S1			S60-0003-05	ROTARY SWITCH METER RANGE		
S2			S42-2153-05	MULTIPLE PUSH SWITCH SPEAKERS		
S3			S31-2136-05	SLIDE SWITCH IMPEDANCE SELECT	YMX	
S4			S62-0001-05	SLIDE SWITCH VOLTAGE SELECT	YM	
D1 ,2			HSS104	DIODE		
D1 ,2			1SS133	DIODE		
D3 -6			HSS104A	DIODE		
D3 -6			1SS131	DIODE		
D7 -10			HSS104	DIODE		
D7 -10			1SS133	DIODE		
D13			S15VB20	DIODE		
D14 -17		*	S5688B	DIODE		
D14 -17			1SR139-100	DIODE		
D18 ,19			HZS18N(B)	ZENER DIODE		
D18 ,19			RD18ES(B)	ZENER DIODE		
D20			HZS24N(B)	ZENER DIODE		
D20			RD24ES(B)	ZENER DIODE		
IC1			UPC1237HA	IC(POWER AMP)		
IC2 ,3			AN6882	IC(7PT LED LEVEL METER DRIVER)		
Q1 -4			2SC1845(F,E)	TRANSISTOR		
Q5 -8			2SC1740S(Q,R)	TRANSISTOR	YMX	
Q5 -8			2SC2458(Y,GR)	TRANSISTOR		
Q9 ,10			2SA1048(Y,GR)	TRANSISTOR		
Q9 ,10			2SA933S(Q,R)	TRANSISTOR	YMX	
Q11 ,12			2SA1124(Q,R)	TRANSISTOR		
Q13 ,14			2SC4137	TRANSISTOR		
Q15 ,16			2SC3944A(Q,R)	TRANSISTOR		
Q17 ,18			2SA1535A(Q,R)	TRANSISTOR		
Q19 ,20			2SC2922LB	TRANSISTOR		
Q21 ,22			2SA1216LB	TRANSISTOR		
Q23 ,24			2SC1740S(Q,R)	TRANSISTOR	YMX	
Q23 ,24			2SC2458(Y,GR)	TRANSISTOR		
Q25 -28			2SA1048(Y,GR)	TRANSISTOR		
Q25 -28			2SA933S(Q,R)	TRANSISTOR	YMX	
Q29 ,30			2SC2631(R,S)	TRANSISTOR		
Q31 ,32			2SD1302(S,T)	TRANSISTOR		
Q33			2SA992(F,E)	TRANSISTOR		
Q34			2SC2590(Q,R)	TRANSISTOR		
Q35			2SC1740S(Q,R)	TRANSISTOR	YMX	
Q35			2SC2458(Y,GR)	TRANSISTOR		
Q36			2SA1048(Y,GR)	TRANSISTOR		
Q36			2SA933S(Q,R)	TRANSISTOR	YMX	
Q37			2SC2003(L,K)	TRANSISTOR		

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⚠ indicates safety critical components.

KM-991

SPECIFICATIONS

For Other Countries

Rated Power Output	
(IHF '66) from 20 Hz to 20,000 Hz	
0.03% T.H.D. at 8Ω	**150 W + 150 W**
Music Power (8 Ω)	**310 W + 310 W**
Total Harmonic Distortion	
20 Hz to 20,000 Hz	**0.015% at 1/2 rated power into 8Ω**
1 kHz	**0.002% at 1/2 rated power into 8Ω**
Inter Modulation Distortion	
(60 Hz:7 kHz = 4:1)	**0.002% at rated power into 8Ω**
Frequency Response	**5 Hz to 200 kHz, +0 dB, –3 dB**
Signal-to-Noise Ratio (IHF-A)	**120 dB (MAIN IN)**
Damping Factor	**More than 35 at 50 Hz into 8Ω**
General	
Power Consumption	**350 W (IEC)**
AC outlets	
UNSWITCHED	**2; (Total 200 W max.)**
Dimensions	**W: 440 mm** **H: 133 mm** **D: 276 mm**
Weight (Net)	**8.6 kg (19.0 lb)**

KM-991

SPECIFICATION

For U.S.A. and Canada

Rated Power Output

150 watts per channel minimum RMS, both channels driven, at 8 Ω from 20 Hz to 20,000 Hz with no more than 0.03% total harmonic distortion. (FTC)

Total Harmonic Distortion	
20 Hz to 20,000 Hz	**0.015% at 1/2 rated power into 8Ω**
1 kHz	**0.002% at 1/2 rated power into 8Ω**
Inter Modulation Distortion	
(60 Hz:7 kHz = 4:1)	**0.002% at rated power into 8Ω**
Frequency Response	**5 Hz to 200 kHz, +0 dB, –3 dB**
Signal-to-Noise Ratio (IHF-A)	**120 dB (MAIN IN)**
Damping Factor	**More than 35 at 50 Hz into 8Ω**
General	
Power Consumption	**5 A**
AC outlets	
UNSWITCHED	**2; (Total 100 W, 0.8 A max.)**
Dimensions	**W: 440 mm (17-5/6")** **H: 133 mm (5-1/4")** **D: 276 mm (10-7/8")**
Weight (net)	**8.6 kg (19.0 lb)**

Note:
KENWOOD follows a policy of continuous advancements in development. For this reason specifications may be changed without notice.

Note :
Component and circuitry are subject to modification to insure best operation under differing local conditions. This manual is based on, the Other Areas (M) standard, and provides information on regional circuit modification through use of alternate schematic diagrams, and information on regional component variations through use of parts list.

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